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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,952	10/17/2005	Dirk Steinmueller	WITT3004/FJD	2625
23364 7590 04/14/2010 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
O MALLEY, MARY CATHERINE				
ART UNIT		PAPER NUMBER		
2857				
MAIL DATE		DELIVERY MODE		
04/14/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,952

Applicant(s)

STEINMUELLER ET AL.

Examiner

MARY C. O'MALLEY

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The action is responsive to the amendments filed on 15 December 2009. Claims 16-30 are pending. Claims 16-18, 20, 21, 24, 28 and 30 are amended.
2. The amendments filed 15 December 2009 are sufficient to overcome the previous 35 U.S.C. 112 second paragraph rejections.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 16-30 are rejected under 35 U.S.C.101 because the claimed invention merely recites a method for monitoring the functioning of sensors. While Applicant has included the limitation "placing the sensor in a test state at time intervals", this limitation simply indicates that a sensor is available during a time interval for data gathering or observation; however, the remaining method steps for monitoring the functioning of the sensor, specifically the step of "obtaining thereby information concerning the duration of the remaining disturbance-free operation of said at least one of the plurality of sensors", the subject matter to which this claim is drawn, are not linked to a statutory class, nor do they transform any underlying subject matter, as this final step may be purely mental.

Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is neither tied to a machine or apparatus, nor does it perform a transformation. As currently presented, the method steps in claims 16-30 need not be performed by a specific machine.

Based on recent Court decisions, it has been held that a § 101 process must (1) be tied to another statutory class (a particular machine or apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example, by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example, by identifying the material that is being changed to a different state.

As such, claim 16 only recites a method that includes steps that could be purely mental and the claim does not in any way tie the process to another statutory class nor does the claim transform an article to a different state or thing. Such claims are therefore non-statutory under 35 U.S.C. 101.

Claims 17-30 do not remedy the deficiencies of the claims from which they depend, with respect to 35 USC 101.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Choe (U.S. Patent No. 6,510,397).

Referring to claim 16, Choe teaches a method for monitoring the functioning of a plurality of sensors (see Choe, column 12 lines 39-41) which measure and monitor the state parameters of liquids or gases (see Choe, column 4 lines 26-30), comprising the steps of:

placing at least one of the plurality of sensors in a test state at time intervals (see Choe, column 12 lines 43-47 and lines 61-63);

registering test parameters at time intervals or at time intervals during the course of registering measured values (see Choe, column 12 lines 61-63);

storing the registered test parameters (see Choe, column 12 lines 47-50);

evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring (see Choe, column 18 line 58 – column 19 line 65);

predicting from said evaluations the development of sensor behavior to be expected in the future (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1); and

obtaining thereby information concerning the duration of the remaining disturbance-free operation of said at least one of the plurality of sensors (see Choe, column 14 lines 4-12).

Referring to claim 17, Choe teaches that said evaluation step is conducted using non-linear interpolation methods, in order to obtain a function describing the behavior of said at least one of the sensors (see Choe, column 19 line 13 – column 20 line 9).

Referring to claim 18, Choe teaches a function is specified and used for a particular sensor of said at least one of the sensors, which reproduces the experience-based sensor behavior (see Choe, column 17 lines 18-35).

Referring to claim 19, Choe teaches that the function involves a polynomial function (see Choe, column 19 lines 18-65).

Referring to claim 20, Choe teaches a first predictive value is determined for the wear limit (see Choe, column 12 lines 39-41).

Referring to claim 21, Choe teaches testing whether the wear limit of the sensor of said at least one sensor will be reached before the next registering of test parameters (see Choe, column 14 lines 1-12).

Referring to claim 22, Choe teaches testing whether a predictively obtained value of the test parameter lies within a warning range this side of the wear limit as defined at this time (see Choe, column 16 lines 39-43).

Referring to claim 23, Choe teaches determining and issuing and displaying, and where necessary, initiating measures for maintenance on the basis of the information concerning the duration of the remaining, disturbance-free operation (see Choe, column 5 lines 35-40).

Referring to claim 24, Choe teaches determining and issuing a predictive point in time for replacement of the sensor of said at least one sensor on the basis of the information concerning the duration of the remaining, disturbance-free operation (see Choe, column 1 lines 12-35).

Referring to claim 25, Choe teaches that as a test parameter, the slope of the sensor signal, or signals, in a particular test state of the sensor is registered and evaluated (see Choe, column 16 line 59 – column 17 line 17).

Referring to claim 26, Choe teaches that as a test parameter, the zero point of the sensor signal, or signals, in a particular test state of the sensor is registered and evaluated (see Choe, column 15 lines 21-33).

Referring to claim 27, Choe teaches that as a test parameter, the internal resistance of an electrode is registered and evaluated (see Choe, column 6 lines 23-26).

Referring to claim 28, Choe teaches that as a test parameter, the change of the dynamic behavior of signals produced by the sensor itself of said at least one sensor is registered and evaluated (see Choe, column 12 lines 43-47).

Referring to claim 29, Choe teaches a plurality of different test parameters are registered and evaluated (see Choe, column 13 lines 2-31).

Referring to claim 30, Choe teaches obtaining a sensor specific, basic data from a storage arrangement of the sensor of said at least one sensor or the measured value transmitter over the internet or over update media, for the evaluation (see Choe, column 9 lines 46-60).

Response to Arguments

5. Applicant's arguments filed 9 April 2008 have been fully considered but they are not persuasive.

Applicant argues that the 35 U.S.C. 101 rejections are improper because the method claims have structure, and while the method claims are directed towards monitoring by collecting data from sensors, the monitoring method steps are not being

performed by a sensor, but rather the steps are being performed on the data collected from the sensors. As stated above, claims 16-30 are rejected under 35 U.S.C.101 because the claimed invention merely recites a method for monitoring the functioning of sensors. While Applicant has included the limitation "placing the sensor in a test state at time intervals", this limitation simply indicates that a sensor is available during a time interval for data gathering or observation; however, the remaining method steps for monitoring the functioning of the sensor, specifically the step of "obtaining thereby information concerning the duration of the remaining disturbance-free operation of said at least one of the plurality of sensors", the subject matter to which this claim is drawn, are not linked to a statutory class, nor do they transform any underlying subject matter, as this final step may be purely mental.

Applicant further argues that Choe does not teach "evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring." However, Applicant's arguments are not well taken, as the "evaluating a backward-looking chronological development of the stored test parameters" simply means that historical data is gathered and then evaluated to determine the functionality of the sensor. Choe teaches setting the thresholds which allow the user to determine if the sensor function properly, if the sensor is close to a fail point or if the sensor has failed, in other words, the thresholds are user to determine the functionality of the sensor. These thresholds are determined by putting the sensor in a operating state and setting a "learning time" which collects data from the sensor and stores these values in memory. The collected data is the evaluated using statistical

methods (i.e. mean, standard deviation) to generate and set the threshold values used to determine sensor functionality as described above (see Choe, column 18 line 58 – column 19 line 65). Therefore, Choe teaches evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring (see Choe, column 18 line 58 – column 19 line 65).

Applicant further argues that Choe does not teach "predicting from said evaluations the development of sensor behavior to be expected in the future." However, Applicant's arguments are not well taken. Choe teaches determining mean time to failure and statistical trending analysis (i.e. predicting expected future behavior) using stored data for statistical trend analysis to determine sensor failure (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1). Therefore, Choe teaches predicting from said evaluations the development of sensor behavior to be expected in the future (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY C. O'MALLEY whose telephone number is (571)272-2211. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Mary Catherine O'Malley/
10 April 2010

/Mohamed Charioui/
Examiner, Art Unit 2857